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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,665	10/24/2003	Jung-Hwa Kang	0808-0345P	6347

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EXAMINER
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NGUYEN, CAM N

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/691,665

Applicant(s)

KANG ET AL.

Examiner

Cam N. Nguyen

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04/24/06 (an amendment/response).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### Response to Amendment

1. Applicants' amendment and remarks, filed April 24, 2006, has been made of record and entered. Claims 1, 4, & 5 have been amended.

Claims 1-7 are currently pending and under consideration.

### Claim Objections

2. Claims 1 & 3-5 are objected to because of the following informalities:

A. In claim 1, line 2, -- , -- is suggested insert after "acrolein".

B. In claim 1, line 2, --and-- should be inserted before "having".

C. In claim 1, second to the last line of the claim, "1~5", "1~6", "1~5" and "0~3" should be changed to -- 1-5 --, -- 1-6 --, -- 1-5 --, and -- 0-3 --, respectively.

D. In claim 3, last line, "1~10" should be changed to -- 1 to 10 --.

E. In claim 4, last line, "," should be deleted.

F. In claim 5, line 2, "and is" should be deleted.

G. In claim 5, the phrase --wherein the acid solution is an organic acid solution having 1 to 10 carbon atoms-- in the last line of the claim should be moved up to line 7 before "contacting".

H. In claim 5, same changes should be made as in C above.

Appropriate correction is required.

**Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krabetz et al., "hereinafter Krabetz", (US Pat. 4,259,211) in view of Khoobiar (US Pat. 4,271,040).

Krabetz discloses a catalyst comprising a premolded inert carrier having a rough surface which has been coated with an active catalyst composition of the formula  $\text{Mo}_{12}\text{A}_a\text{B}_b\text{C}_c\text{D}_d\text{O}_x$ , wherein: A is a mixture of V and W; B is copper or copper in a mixture with a metallic element selected from the group consisting of Fe, Mn, Ni, and Cr; C is a metallic element selected from the group consisting of Nb, Ta, Bi, Sb, Sn, Th, Ce, and U; D is a metallic element selected from the group consisting of Li, Na, K, Rb, Cs and Tl; and a is from 0.5 to 12 for "vanadium" and from 0.2 to 6 for "tungsten", the sum for "vanadium" and "tungsten" being from 2.5 to 18, b is from 0.5 to 8, the meaning of b for copper being 0.5 to 6, c is from 0 to 10, d is from 0 to less than 0.1 and x is from 41 to 127.75, said active catalyst composition is first manufactured, before its application to the carrier, from thermally easily decomposed salts of the metallic components by mixing aqueous solutions, slurries or moist solid masses of said easily decomposed salts, drying the mixture and calcining the dried composition at from 140°C to 600°C,

and said active catalyst composition in a particle size reduced to less than 150 micromoter than being applied together with water to the rough surface of the premolded carrier to form an active catalyst layer, etc. (see col. 10, claim 1).

The difference between the claimed process and the disclosed process, is that the disclosed process does not include step b), which is "introducing a base solution and an acid solution into the catalyst suspension of step a) to control acidity of the catalyst suspension to a pH of 3.5 to 6.5".

However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have incorporated this step into the process of Krabetz and to have done the same in order to control and acidity of the suspension because it is known and conventional to do so, as evidenced by Khoobiar (see Khoobiar at col. 4, ln 3-7). Specifically, Khoobiar fairly suggests that in some cases the solutions may have acids and/or bases added to them to facilitate dissolution of the catalyst precursors. For example, acids such as hydrochloric acid or nitric acid, or bases such as ammonium hydroxide can be used as desired.

With respect to the claimed catalyst BET surface area, it is expected that the catalyst of the reference would possess the same BET surface area upon optimizing of the pH values and particle sizes of the catalyst precursors in such solution.

#### **Response to Applicants' Arguments**

5. Applicants' response filed on April 24, 2006 has been fully considered, but not deemed persuasive in view of the new ground of rejection(s) above.

The examiner maintains the position that it is obvious for one having the ordinary skill in the art at the time the invention was made to have controlled the acidity of the catalyst suspension in the process disclosed by Krabetz by using a base or an acid solution to obtain the desired pH values and particle sizes of the catalyst precursors to achieve an effective catalyst having small surface area as applicants desired because it is a result effective parameter, which involves only routine experimentation within the level of one having the ordinary skill in the art to do so, and in view of the teaching disclosed by Khoobiar as discussed in the rejection (see above). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### **Conclusion**

6. Claims 1-7 are pending. Claims 1-7 are rejected. No claims are allowed.
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Cam N Nguyen, whose telephone number is 571-272-1357. The examiner can normally be reached on M, W, R, & F, 9:00 AM - 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1754

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nguyen/cnn *CNN*  
July 07, 2006

CAM N. NGUYEN  
PRIMARY EXAMINER

*Cam Nguyen*  
Art Unit: 1754